National Institute of Environmental Health Sciences

Human biometeorology

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Abstract:

Human biometeorology is experiencing resurgence because of concerns about the impact of weather and climate on living organisms and the effects of human activities on the atmospheric environment. The purpose of this progress report is to review recent research in three strongly emergent areas of human biometeorology, namely human thermal comfort assessment, ultraviolet radiation (UVR) and climate and vector borne disease. Within the field of human thermal comfort assessment there is evidence of a shift away from empirical two-variable to numerically solved human heat budget based indices for assessing human thermal comfort, although the former are still applied widely. Recent research activity concerning UVR has focused on the evaluation of measurement error, the examination of controlling factors, the reconstruction of long-term records using a variety of methods for the analysis of UVR trends and variability and climate change related projections of future UVR levels. While for some regions clear evidence has emerged of an association between climate and vector borne disease, for other regions the situation is unclear or complex. This poses a challenge for developing climate-based early warning systems for diseases such as malaria and dengue and making projections of the potential impacts of climate change on the geographic range and magnitude of VBD. From the material reviewed in this progress report it is clear that human biometeorology fits comfortably within physical geography as it addresses many of the issues aligned with the human-environment, spatial and earth science traditions of physical geography.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Precipitation, Solar Radiation, Temperature

Temperature: Extreme Cold, Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Infectious Disease, Injury, Other Health Impact

Infectious Disease: Vectorborne Disease

Vectorborne Disease: General Vectorborne

Other Health Impact: heat stress; cold stress

Resource Type: ☒

format or standard characteristic of resource

Review

Timescale: ☒

time period studied

Time Scale Unspecified